



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/735,664	12/14/2000	Koji Sahashi	100725-00026	7133

7590

02/20/2002

ARENT FOX KINTNER PLOTKIN & KAHN, PLLC
Suite 600
1050 Connecticut Avenue, N.W.
Washington, DC 20036-5339

EXAMINER

BINDA, GREGORY JOHN

ART UNIT

PAPER NUMBER

3629

DATE MAILED: 02/20/2002

9

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/735,664

Applicant(s)
Sahashi et al

Examiner
Greg Binda

Art Unit
3629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Jan 29, 2002
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above, claim(s) 1-8, 16, and 19-38 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9-15, 17, and 18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on Dec 14, 2000 is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☒ All b) ☐ Some* c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- *See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
- 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other:

Art Unit: 3629

Election/Restriction

1. The species identified in the election requirement mailed Nov 29, 2001, Paper No. 6 are modified below so as to correspond with the grouping of the embodiments in the election filed Jan 29, 2002, Paper No. 8.

Species	I	II	III	IV
Figures	1-9	10-13	14-20	21-39

2. Applicant's election without traverse of Species III in Paper No. 8 is acknowledged.
3. Claims 1-8, 16 & 19-38 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 8.

Drawings

4. Figures 40 & 41 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated per page 1, line 16 and page 3, line 20. See MPEP § 608.02(g).

Specification

Art Unit: 3629

5. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.
6. The listing of references in the specification (e.g. page 3, line 21; page 5, line 1; page 6, line 15; etc.) is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be - submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.
7. The disclosure is objected to because it includes numerous iterations of the nonsensical term "mouse portion" 54. See also claims 10 & 11. The term should be replaced at every instance with an appropriate substitute (i.e. house or bell portion).
8. The specification is objected to as failing to comply with 37 CFR 1.71 and 1.75(d)(1) because the detailed description fails to provide proper antecedent basis for the limitation, "the separate inner ring engaging said hub ring," in claim 18.
9. The abstract of the disclosure is objected to:

Art Unit: 3629

- a. As failing to comply with 37 CFR 1.72(b) because it is too long.
- b. For beginning with a phrase that can be implies, "Disclosed herein".

Claim Objections

10. Claims 10-15, 17 & 18 are objected to because they depend from claims that have been withdrawn from consideration. (For the remainder of this action, claims 10, 12-15, 17 & 18 will be treated as depending from claim 9 only.)

Claim Rejections - 35 U.S.C. § 112

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. Claim 11, 13-15, 17 & 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- a. There is insufficient antecedent basis for the following limitations in the claims:
 - i. Claim 11, lines 2 & 3: "the communicating region"
 - ii. Claim 13, line 2: "said stub shaft"
 - iii. Claim 13, line 2; claim 17, line 4 and claim 18, lines 3-6: "the outer diameter portion"

Art Unit: 3629

iv. Claim 15, lines 6+ and claim 17, lines 4+: "the outer joint ring of said fixed type constant velocity universal joint"

v. Claim 17, lines 2 & 3 and claim 18, line 2: "the plurality of rows"

vi. Claim 18, line 4: "the hub ring"

vii. Claim 18, line 6: "the separate inner ring"

b. Claim 18, line 6 recites that the separate inner ring engages the hub ring. It is not clear how this can be so since the separate inner ring 37 is expressly disclosed on page 35, lines 15 & 16, as being separated from the hub ring 36.

Claim Rejections - 35 U.S.C. § 102

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

14. Claims 9 & 13 are rejected under 35 U.S.C. 102(b) as being anticipated by GKN. GKN shows on page 16 (see the third embodiment from the top in Fig. B) a drive wheel bearing assembly having an outboard (because it is shown furthest from the center of the page) fixed type constant velocity universal joint ("FIXED JOINT") coupled to a wheel bearing (see picture above Fig. B), mounted to one end portion of an intermediate shaft; an inboard (see also "inboard joint"

Art Unit: 3629

on page 12) sliding type constant velocity universal joint ("DOUBLE OFFSET JOINT") coupled to a differential (see "transmission side" on page 12 and the picture above Fig. B), mounted to the other end portion of the intermediate shaft; and a seal boot mounted on the other end of the intermediate shaft. On page 12, GKN discloses that the allowable plunging down to the bottom portion of the outer joint ring of the sliding type joint is 55 mm. On page 7, GKN discloses that the width of the inner joint ring of the fixed type joint is between 24 and 30 mm. Therefore the allowable plunge (55 mm) of the sliding joint is at least equal to the width (24 to 30 mm) of the inner ring of the fixed joint at a minimum operative angle of the sliding type constant velocity universal joint.

15. Claims 9, 13 & 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Krude, US 4,300,651. Fig. 1 shows a drive wheel bearing assembly having an fixed type constant velocity universal joint 7 coupled to a wheel bearing 1, mounted to one end portion of an intermediate shaft 12; a sliding type constant velocity universal joint 19 coupled to a differential (see col. 3, lines 59 & 60), mounted to the other end portion of the intermediate shaft 12; and a resin (note the cross hatch pattern) seal boot 11 mounted on the other end of the intermediate shaft 12. In Fig. 1 the allowable plunge of the sliding joint 19 appears to be at least equal to the width of the inner ring of the fixed joint 7 at a minimum operative angle of the sliding type constant velocity universal joint 19.

Art Unit: 3629

Claim Rejections - 35 U.S.C. § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over GKN in view of Mizukoshi et al, US 5,975,767, (Mizukoshi). GKN shows all the limitations of the claim except a hollow portion between the stem and bell portions of the fixed joint. In col. 13, lines 18-21, Mizukoshi teaches making a hollow portion between the stem and bell portions of a fixed joint in order to provide a lightweight joint. It would have been obvious to one of ordinary skill in the art to modify the drive wheel assembly of GKN by making the fixed joint with a hollow portion between its stem and bell portions in order to provide a lightweight joint as taught by Mizukoshi.

18. Claims 12, 15, 17 & 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over GKN in view of Fukumura, US 5,607,241. GKN shows all the limitations of the claims except the wheel bearing plastically connected to the fixed joint and bearing races on a hub ring, a separate ring and directly on the fixed joint. In Figs. 1 & 2 Fukumura shows a drive wheel bearing assembly comprising a wheel bearing 3 plastically connected (as at weld 5) to a fixed joint 1 and bearing races 7 on a hub ring 3, a separate ring 13 (in Fig. 2) and directly on the fixed joint

Art Unit: 3629

1 (in Fig. 1). In col. 2, lines 6-10, Fukumura teaches making a drive wheel bearing assembly in this way in order to provide a small compact wheel bearing assembly which can be assembled easily while keeping a high reliability of connection. It would have been obvious to one of ordinary skill in the art to modify the drive wheel bearing assembly of GKN by making the wheel bearing plastically connected to the fixed joint and bearing races on a hub ring, a separate ring and directly on the fixed joint in order to provide a small compact wheel bearing assembly which can be assembled easily while keeping a high reliability of connection as taught by Fukumura.

19. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over GKN in view of Misumi et al, US 5,230,936 (Misumi). GKN shows all the limitations of the claim but does not expressly disclose the seal boot as formed from resin. In col. 4, lines 18-20, Misumi teaches forming a seal boot with resin in order to improve the boot's resistance to abrasion. It would have been obvious to one of ordinary skill in the art to modify the drive wheel assembly of GKN by making the seal boot with resin in order to improve the boot's resistance to abrasion as taught by Misumi.

Allowable Subject Matter

20. Claim 11 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims. Allowable material is indicated because the prior art does

Art Unit: 3629

not show or suggest a drive wheel assembly comprising all the limitations of claim 9 as well as an end cap which includes a communicating portion.

Conclusion

21. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hayama et al and Sahashi et al each show a drive wheel assembly. SAE shows that a typical drive halfshaft comprises a fixed joint at its outboard end and a sliding joint at its inboard end. Kondo shows an end cap 12 with a communicating portion 13.

22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Greg Binda whose telephone number is (703) 305-2869. The examiner can normally be reached Tuesday through Friday from 9:30 am to 7:00 pm. The examiner can also be reached on alternate Mondays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne Browne, can be reached on (703) 308-1159. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 306-4195, 305-3597 and 305-7687.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-2168.



Greg Binda
Patent Examiner